

### CLAIM AMENDMENTS

1. (currently amended): ~~Temperature~~ A temperature sensitive polymer having a lower critical solution temperature that changes during incubation in an aqueous solution or medium, which polymer is a homo or interpolymer of a hydrophobically modified hydroxyalkyl(meth)acrylamide.
2. (currently amended): ~~Polymer according to~~ The polymer of claim 1, wherein the polymer comprises a hydrophobic group which is bound to the hydroxyalkyl (meth)acrylamide by a hydrolysable bond, ~~preferably by a bond selected from esters, orthoesters, amides, carbonates, carbamates, anhydrides, ketals, and acetals, more preferably by an ester bond.~~
3. (currently amended): ~~Polymer according to claim 1 or 2~~ The polymer of claim 2, wherein the hydrophobic group is ~~selected from alkyls~~ alkyl, ~~aryls~~ aryl, lactic acid ~~[[and]]~~ or lactic acid oligomers, ~~preferably from lactic acid and lactic acid oligomers.~~
4. (currently amended): ~~Polymer according to any one of the preceding claims~~ The polymer of claim 3, wherein ~~[[the]]~~ alkyl is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl and hexyl.
5. (currently amended): ~~Polymer according to any one of the preceding claims~~ The polymer of claim 1, which polymer is a homo or interpolymer of ~~[[a]]~~ an (N-(2-hydroxyalkyl) (meth)acrylamide lactate).
6. (currently amended): ~~Polymer according to~~ The polymer of claim 5, which polymer is selected from the group consisting of homopolymers and interpolymers of (N-(2-hydroxyethyl) methacrylamide lactates) and (N-(2-hydroxyethyl) acrylamide lactates).
7. (currently amended): ~~Polymer according to any one of the preceding claims~~ The polymer of claim 1, wherein the polymer comprises at least one component selected from

monolactates, dilactates, trilactates and tetralactates, ~~preferably at least one of monolactate groups and dilactate groups.~~

8. (currently amended): ~~Polymer according to any one of the preceding claims~~ The polymer of claim 1, wherein the polymer is a copolymer of (a) at least one hydroxyalkyl (meth)acrylamide (lactate)<sub>n</sub>, wherein n represents the number of lactate units, n being at least 3, ~~preferably an integer of 3 to 10, more preferably 3 or 4,~~ and (b) at least one hydroxyalkyl (meth)acrylamide (lactate)<sub>n</sub>, wherein n is 0, 1 or 2, ~~preferably 1 or 2.~~

9. (canceled)

10. (currently amended): ~~Polymer according to any one of the preceding claims~~ The polymer of claim 1, having a lower critical solution temperature before incubation below ~~mammalian~~ human body temperature and a different lower critical solution temperature after incubation above ~~mammalian~~ human body temperature, ~~and wherein the mammalian body temperature preferably is human body temperature.~~

11. (currently amended): A controlled release system comprising ~~[[a]]~~ the temperature sensitive polymer ~~according to any one of the preceding claims of claim 1~~ and an active ingredient.

12. (currently amended): ~~Controlled~~ The controlled release system ~~according to of~~ claim 11, wherein the polymer is in the form of a polymeric micelle in which a hydrophilic block is present which hydrophilic block ~~preferably comprises a polyalkyleneglycol, more preferably a poly(ethyleneglycol).~~

13. (currently amended): ~~Controlled~~ The controlled release system ~~according to of~~ claim 11 ~~[[or 12]]~~, wherein the system is in the form of a hydrogel.

14. (currently amended): ~~Controlled~~ The controlled release system ~~according to of~~ claim 13, wherein the hydrogel is an ABA block copolymer, wherein block A is a temperature

sensitive polymer ~~according to any one of the claims 1-10~~ of claim 1 and B is a hydrophilic polymer, ~~preferably a polyalkyleneglycol, more preferably a poly(ethyleneglycol).~~

15. (currently amended): ~~Targeting~~ A targeting drug composition, comprising a drug and particles of ~~[[a]] the controlled release system of claim 11 according to any one of the claims 11-14, which particles preferably have an average diameter of less than 200 nm more preferably in the range of 10 to 100 nm.~~

16. (currently amended): ~~Targeting~~ The targeting drug composition ~~according to~~ of claim 15, which further comprises a homing device.